

## STANDARD 9.4: CAREER AND TECHNICAL EDUCATION

### Career Clusters Table

All New Jersey career and technical education programs fall under one of the 16 career clusters of the [States' Career Clusters Initiative](#). Each career cluster is listed in the first column of the Career Clusters Table, below, along with a link to the standards document for that cluster. The second column provides a description of each career cluster. The third column shows how the organization of each career cluster is further refined into career pathways.

In Standard 9.4, each of the 16 career clusters is listed as a strand (the identifier for each strand—9.4.A through 9.4.P—is also shown in column one of the Career Clusters Table). In each of the 16 career cluster charts, there are two types of cumulative progress indicators (CPIs): (1) general academic CPIs that are common to all 16 career clusters, which are italicized; and, (2) CPIs that are common to occupations found within the career cluster. CPIs found in the career pathway charts are specific to occupations found within the career pathway.

CAREER CLUSTER TABLE		
CAREER CLUSTER NAME	CAREER CLUSTER DESCRIPTION	CAREER PATHWAYS
<b>9.4.A:</b>  <b>Agriculture, Food, &amp; Natural Resources</b>	The <b>Agriculture, Food, &amp; Natural Resources Career Cluster</b> includes occupations and careers in production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.	1. Food Products and Processing Systems
		2. Plant Systems
		3. Animal Systems
		4. Power, Structural and Technical Systems
		5. Natural Resources Systems
		6. Environmental Service Systems
		7. Agribusiness Systems
<b>9.4.B</b>  <b>Architecture &amp; Construction</b>	The <b>Architecture &amp; Construction Career Cluster</b> includes occupations and careers in designing, planning, managing, building, and maintaining the built environment.	1. Design / Pre - Construction
		2. Construction
		3. Maintenance / Operations
<b>9.4.C</b>	The <b>Arts, A/V Technology &amp; Communications Career Cluster</b>	1. Audio & Video Technology and Film
		2. Journalism and Broadcasting

<b>Arts, A/V Technology &amp; Communications</b>	includes occupations and careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.	3. Printing Technologies
		4. Performing Arts
		5. Telecommunications Technologies
		6. Visual Arts
<b>9.4.D Business, Management &amp; Administration</b>	The <b>Career Cluster</b> includes occupations and careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.	1. Administrative Services
		2. Business Information Technology
		3. General Management
		4. Business Financial Management and Accounting
		5. Human Resources
		6. Operations Management
<b>9.4.E Education &amp; Training</b>	The <b>Education &amp; Training Career Cluster</b> includes occupations and careers in planning, managing, and providing education and training services, and related learning support services.	1. Professional Support Services
		2. Teaching and Training
<b>9.4.F Finance Career</b>	The <b>Finance Career Cluster</b> includes occupations and careers in planning, services for financial and investment planning, banking, insurance, and business financial management.	1. Accounting
		2. Banking
		3. Business Finance
		4. Insurance
		5. Securities and Investments
<b>9.4.G Government &amp; Public Administration</b>	The <b>Government &amp; Public Administration Career Cluster</b> includes occupations and careers in executing governmental functions to include governance, national security, foreign service, planning, revenue and taxation, regulation, and management and	1. Governance
		2. Foreign Service

	administration at the local, state, and federal levels.	3. Planning
<b>9.4.H</b>  <b>Health Science Career Cluster</b>	The <b>Health Science Career Cluster</b> includes occupations and careers in planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnological research and development.	1. Therapeutic Services
		2. Diagnostics Services
		3. Health Informatics
		4. Support Services
		5. Biotechnology Research and Development
<b>9.4.I</b>  <b>Hospitality &amp; Tourism</b>	The <b>Hospitality &amp; Tourism Career Cluster</b> encompasses the management, marketing, and operations of restaurants and other foodservices, lodging, attractions, recreation events, and travel related services.	1. Restaurants & Food and Beverage Services
		2. Lodging
		3. Travel and Tourism
		4. Recreation, Amusements and Attractions
<b>9.4.J</b>  <b>Human Services</b>	The <b>Human Services Career Cluster</b> includes occupations and careers in educating and preparing individuals for employment in career pathways that relate to families and human needs.	1. Early Childhood Development and Services
		2. Family and Community Services
		3. Personal Care Services
		4. Consumer Services
<b>9.4.K</b>  <b>Information Technology</b>	The <b>Information Technology Career Cluster</b> includes occupations and careers in building linkages for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, Internet, multimedia, and systems integration services.	1. Network Systems
		2. Information Support and Services
		3. Web and Digital Communication
		4. Programming and Software Development
<b>9.4.L</b>  <b>Law, Public Safety, Corrections &amp; Security</b>	The <b>Law, Public Safety, Corrections &amp; Security Career Cluster</b> includes occupations and careers in planning, managing, and providing legal, public safety, corrections, protective services and	1. Correction Services
		2. Emergency and Fire Management Services
		3. Security and Protective Services

	homeland security, including professional and technical support.	4. Law Enforcement Services
		5. Legal Services
9.4.M  <b>Manufacturing</b>	The <b>Manufacturing Career Cluster</b> includes occupations and careers in planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing / process engineering.	1. Manufacturing Production Process Development
		2. Production
		3. Maintenance, Installation and Repair
		4. Quality Assurance
		5. Logistics and Inventory Control
		6. Health, Safety, and Environmental Assurance
9.4.N  <b>Marketing, Sales &amp; Service</b>	The <b>Marketing, Sales &amp; Service Career Cluster</b> includes occupations and careers in planning, managing, and performing marketing activities to reach organizational objectives.	1. Marketing Communications
		2. Marketing Management
		3. Marketing Research
		4. Management and Entrepreneurship
		5. Merchandising
		6. Professional Sales and Marketing
9.4.O  <b>Science, Technology, Engineering &amp; Mathematics</b>	The <b>Science, Technology, Engineering &amp; Mathematics Career Cluster</b> includes occupations and careers in planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.	1. Engineering and Technology
		2. Science and Mathematics
9.4.P  <b>Transportation, Distribution &amp; Logistics</b>	The <b>Transportation, Distribution &amp; Logistics Career Cluster</b> includes occupations and careers in planning, management, and movement of people, materials, and goods by road, pipeline, air,	1. Transportation Operations
		2. Logistics Planning and Management Services
		3. Warehousing and Distribution Center Operations

	rail, and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.	4. Facility and Mobile Equipment Maintenance
		5. Transportation Systems / Infrastructure Planning, Management, and Regulation
		6. Health, Safety and Environmental Management
		7. Sales and Service



## **RESOURCES**

- United States Department of Education. (2006). *Carl D. Perkins Career and Technical Education Act of 2006, Public Law 109–270*. Washington, D.C. Author: 109th Congress
- New Jersey Department of Education. (2008). *New Jersey Five-Year State Plan for Career and Technical Education*. Trenton, N.J. Author.
- New Jersey Department of Education. (2005). *N.J.A.C. 6A:8 Standards and assessment for student achievement (as readopted with amendments, June 1, 2005)*. Trenton, NJ: Author. Retrieved January 8, 2009, from <http://www.nj.gov/education/code/current/title6a/chap8.pdf>
- New Jersey Department of Education. (2008). *N.J.A.C. 6A:9 Professional licensure and standards (as readopted 11/19/08, effective 01/05/09)*. Trenton, NJ: Author. Retrieved January 8, 2009, from <http://www.nj.gov/education/code/current/title6a/chap9.pdf>
- New Jersey Department of Education. (2006). *N.J.A.C. 6A:19, Career and technical education programs and standards*. Trenton, NJ: Author. Retrieved January 8, 2009, from <http://www.nj.gov/education/code/current/title6a/chap19.pdf>
- States' Career Clusters Initiative. (2008). [\*Career clusters knowledge & skill charts\*](#). Silver Spring, MD: Author.
- [National Association of State Boards of Education](#) Study Group on Promoting Excellence in Career and Technical Education. (2008). *Learning to work, working to learn: Transforming career and technical education*. Alexandria, VA: Author.
- [National Governors Association Center for Best Practices](#). (2007). *Issue brief: Retooling career technical education*. Washington D.C.: Author

## **DEFINITIONS**

1. "CTE programs" means a program curriculum, which shall include:
  - A coherent sequence of courses of not fewer than three identifiable courses;
  - Classroom instruction combined and coordinated with field, shop, or laboratory experiences, structured learning experiences, or other experiences which are appropriate to the competencies of the career clusters;
  - Academic content that is aligned to the New Jersey Core Curriculum Content Standards for secondary programs;
  - Content that meets industry-approved or nationally-recognized skill standards;

- Industry-based skill certificates, when available;
- Opportunities to participate in structured learning;
- Opportunities to participate in career and technical student organizations;
- A career and technical education safety and health program and plan;
- Adequate resources required to operate the program, including sufficient and appropriate instructional and support staff, facilities, and equipment;
- A plan to establish relevant postsecondary education and training linkages; and
- Procedures for the evaluation of student and program performance and methods to improve programs based upon evaluation results.

*N.J.A.C. 6A:19-3.1 Program requirements*

## **2. Carl D. Perkins Career and Technical Education Improvement Act of 2006**

### **SEC. 2. PURPOSE.**

The purpose of this Act is to develop more fully the academic and career and technical skills of secondary education students and postsecondary education students who elect to enroll in career and technical education programs, by—

- (1) building on the efforts of States and localities to develop challenging academic and technical standards and to assist students in meeting such standards, including preparation for high skill, high wage, or high demand occupations in current or emerging professions;
- (2) promoting the development of services and activities that integrate rigorous and challenging academic and career and technical instruction, and that link secondary education and postsecondary education for participating career and technical education students;
- (3) increasing State and local flexibility in providing services and activities designed to develop, implement, and improve career and technical education, including tech prep education;
- (4) conducting and disseminating national research and disseminating information on best practices that improve career and technical education programs, services, and activities;
- (5) providing technical assistance that—
  - (A) promotes leadership, initial preparation, and professional development at the State and local levels; and
  - (B) improves the quality of career and technical education teachers, faculty, administrators, and counselors;
- (6) supporting partnerships among secondary schools, postsecondary institutions, baccalaureate degree granting institutions, area career and technical education schools, local workforce investment boards, business and industry, and intermediaries; and
- (7) providing individuals with opportunities throughout their lifetimes to develop, in conjunction with other education.

- 3. “New Jersey Five-Year State Plan for Career and Technical Education”**  
means the State plan for career and technical education created as per the requirements of the Carl D. Perkins Career and Technical Education Act of 2006



and approved by the New Jersey State Board of Education in DATE. The State plan was created in consultation with academic and career and technical education teachers, faculty, and administrators; career guidance and academic counselors; eligible recipients; charter school authorizers and organizers consistent with State law; parents and students; institutions of higher education; the State tech prep coordinator and representatives of tech prep consortia (if applicable); entities participating in activities described in section 111 of Public Law 105-220; interested community members (including parents and community organizations); representatives of special populations; representatives of business and industry (including representatives of small business); and representatives of labor organizations in the State, and in consultation with the Governor of the State.

4. **“Career Clusters”** mean groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into the Career Clusters based on the fact that they require a set of common knowledge and skills for career success. The knowledge and skills represented by Career Clusters prepare learners for a full range of occupations/career specialties, focusing on the holistic, polished blend of technical, academic and employability knowledge and skills. This approach enhances the more traditional approach to career and technical education in which instruction may focus on one or two occupations and emphasize only specific occupational skills. *States’ Career Cluster Initiative*
5. **States’ Career Cluster Initiative**: The States’ Career Clusters Initiative (SCCI) is an initiative established under the National Career Technical Education Foundation to provide Career Clusters as a tool for seamless transition from education to career in this era of changing workplace demands. SCCI helps states as they connect career technical education (CTE) to education, workforce preparation, and economic development. To this end, SCCI develops new products and promotes information-sharing, techniques, and methods to aid the development and implementation of Career Clusters within states.
6. **“Career Pathways”** mean sub-groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into pathways based on the fact that they require a set of common knowledge and skills for career success. *States’ Career Cluster Initiative*
7. **“Knowledge and Skills”** mean industry-validated statements that describe what learners/employees need to know and be able to do for career success within a Cluster and/or Pathway. *States’ Career Cluster Initiative*
8. **National Association of State Directors of Career and Technical Education Consortium**: Founded in 1920, the National Association of State Directors of Career Technical Education Consortium is the Washington D.C.-based professional society of the state and territory agency heads responsible

for career technical education. The state directors are committed to leadership and results.

**9. National Advisory Committees (NACs):** The career cluster NACs are composed of leaders from education, business/industry, government entities, associations, and labor. NACs collaborate in regard to content review of Cluster Knowledge and Skills Statements and other Cluster-related business. The career cluster leaders for each of the 16 national advisory committees are:

1. Agriculture, Food, & Natural Resources: [National Council for Agricultural Education](#)
2. Architecture & Construction: [Home Builders Institute](#)
3. Arts, Audio/Video Technology & Communications: [VTECS](#), A Consortium for Innovative Career and Workforce Development Resources
4. Business Management & Administration: [National Association of State Directors of Career and Technical Education Consortium](#), (NASDCTEc)
5. Education & Training: [Michigan Department of Labor & Economic Growth and Career Communications, Inc.](#)
6. Finance: [National Association of State Directors of Career and Technical Education Consortium](#), (NASDCTEc)
7. Government & Public Administration: [National Association of State Directors of Career and Technical Education Consortium](#), (NASDCTEc)
8. Health Science: [The National Consortium on Health Science & Technology Education](#)
9. Hospitality & Tourism: [National Association of State Directors of Career and Technical Education Consortium](#) (NASDCTEc)
10. Human Services: [National Association of State Directors of Career and Technical Education Consortium](#) (NASDCTEc)
11. Information Technology: [CompTIA](#)
12. Law, Public Safety, Corrections & Security: [The National Partnership for Careers in Law, Public Safety, Corrections and Security](#)
13. Manufacturing: [National Council for Advanced Manufacturing](#) (NACFAM)
14. Marketing: [National Association of State Directors of Career and Technical Education Consortium](#), (NASDCTEc)
15. Science, Technology, Engineering & Mathematics: [Project Lead the Way](#)
16. Transportation, Distribution, & Logistics: Interim Leader: [Illinois Office of Educational Services](#)

**10. Standard 9.4 Pre-focus Groups:** The following career and technical education teacher professional organizations and individuals provided input to the New Jersey Department of Education, Office of Career and Technical Education, in developing the draft of Standard 9.4 Career and Technical Education:

- **Agriculture:** [NJ FFA](#) Association state director and teacher advisors
- **Arts, A/V Technology and Communications:** [NJ Television Educators Consortium](#) (NJ-TEC) and Ms. Christina Marte, [Ocean County Vocational School District](#), [National Dance Education Association](#) Teacher of the Year

- **Business, Management and Administration:** [Future Business Leaders of America](#) (FBLA)
- **Health:** [NJ Health Occupations Students of America](#) (NJ HOSA)
- **Hospitality and Tourism:** [Cape May County Technical School District Hospitality & Tourism Tech](#) Prep grant program
- **Human Services:** [NJ Family, Home and Consumer Sciences Career and Technical Student Association](#) (NJ FCCLA)
- **IT:** [NJ Technology Student Association](#) and the [NJ Business/Technology Education Association](#) (NJBTEA)
- Law, Public Safety, Corrections & Security: [Cape May County Technical School District Law and Public Safety Tech Prep](#) grant program
- **Manufacturing:** [Career and Technical Education Association of New Jersey](#) (CTEANJ)
- **Marketing:** [NJ DECCA](#), an Association of Marketing Students
- **STEM:** Technology: Project Lead the Way Engineering grant program, [Watchung Hills Regional High School](#) and Project Lead the Way Science grant program, [Williamstown High School](#)
- **Transportation, Distribution & Logistics:** Dennis Sienicki, [Hunterdon County Polytech](#) automotive instructor and New Jersey evaluation team leader for [Automotive Service Excellence/National Automotive Technician Education Foundation](#) (ASE/NATEF)

**11. "Career and Technical Education Teaching Certificates"** means an instructional certificate with a career and technical education endorsement, issued by the New Jersey Department of Education, which authorize the holder to teach approved career and technical education programs in all public schools in accord with N.J.A.C. 6A:9-11.2. [N.J.A.C. 6A:9-9.2\(a\)9.iv, Endorsements and authorizations](#)

**12. New Jersey Career and Technical Education Advisory Council:** The New Jersey Department of Education, Office of Career and Technical Education (OCTE), formed the New Jersey Career and Technical Education Advisory Council (Advisory Council) in accordance with Section 122(a)(3) of the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) and the Guide for Submission of State Plans, in order to initiate a process to elicit public input on the draft Five-Year State Plan.